

## METHOD AND APPARATUS FOR UNIFIED SIMULATION

### Abstract

A significant improvement over current methods for co-simulation of the hardware and software components of embedded digital system designs is provided. The present invention integrates the hardware and software components of a system design into a single unified simulation environment. The unified simulation environment and the various component models of the system design are created in a high level general purpose programming language. This allows inter-component communications and communications with the unified simulation environment to be carried out through the use of function calls, which significantly increases the overall simulation speed. Additionally, the unified simulation environment runs as a single process, which significantly improves debugging capabilities. Furthermore, the present invention employs a higher level of abstraction than conventional simulation environments and thereby significantly increases simulation speed while moving away from the detail saturated event driven simulations of the past.